

# MARINE RECREATIONAL INFORMATION PROGRAM

**FY Project Plan**

**WA Dual-Frame Telephone Survey**

**Created on**

# **1. Overview**

## **1.1. Background**

The Marine Recreational Fisheries Statistics Survey (MRFSS) has traditionally collected fishing effort data for marine recreational fisheries through the Coastal Household Telephone Survey (CHTS). The CHTS utilizes a random digit dialing (RDD) approach to contact residents of coastal county households and collect information on fishing behavior. While the target population of the CHTS sampling frame is residents of coastal county households, the frame also includes large numbers of non-fishing households. This overcoverage makes the CHTS inefficient, as a relatively small proportion of the population participates in recreational fishing during any given sampling period. Consequently, a large number of households must be contacted in order to obtain a sufficient sample for estimating fishing effort. Furthermore, the CHTS sampling frame is incomplete as coastal households that do not have land-based telephones and non-coastal anglers are excluded. Adjustment factors derived from data collected through Access-Point Intercept Surveys (APIS) are required to compensate for these gaps in sampling frames. These adjustments, which may account for significant portions of total fishing effort (>50% in some strata), are often based upon untested assumptions that are inconsistent with the selection probability of the APIS sample design (NRC 2006).

Sampling from lists of saltwater anglers is a more efficient means of collecting data on fishing effort. Such lists exist in some states in databases of saltwater fishing license holders. Several states have recognized the benefits of sampling from angler lists and have developed surveys that utilize license databases as sampling frames; for example, the California Recreational Fisheries Survey (CRFS), Oregon Shore and Estuary Boat Survey (SEBS), Washington Angler License Telephone Survey on the Pacific coast, and Gulf of Mexico Angler License Directory Survey (ALDS). Despite providing more efficient sample frames for recreational fishing surveys, all state databases of licensed anglers exclude one or more segments of the population by allowing exemptions to licensing requirements. These exclusions, as well as potential non-compliance with licensing regulations, result in under-coverage of the angling population.

## **1.2. Project Description**

To compensate for the inefficiency and under-coverage of the CHTS and the under-coverage of license-frame surveys, a methodology has been developed that integrates the independent methodologies in a dual-frame approach. This methodology utilizes a multi-frame approach that includes; 1) list-based sampling from state saltwater license databases to cover licensed anglers (Angler License Directory Survey or ALDS); 2) RDD sampling of coastal county households to cover non-licensed, coastal resident anglers with phones (CHTS); and 3) expansion factors derived from access-point intercept sampling to cover non-licensed, non-coastal resident anglers and non-licensed, coastal resident anglers without phones. The methodology, which builds upon the strengths of the independent survey frames and results in a more efficient and potentially less-

biased approach for estimating total fishing effort, was implemented in Florida, Alabama, Mississippi, and Louisiana during 2007, and expanded to North Carolina in 2008.

While the dual-frame methodology is still being refined and tested, preliminary results suggest that the approach offers promise as a means of sampling and estimating recreational fishing effort. For example, the ALDS component is proving to be significantly more efficient than the CHTS in contacting saltwater anglers; between 25-65 % of respondents reported fishing in the ALDS, compared to 6-12% of CHTS respondents. In addition, the integration of independent methods in a dual-frame design has improved survey coverage. Based upon information collected from access-point intercept surveys, the coverage of the dual-frame approach (percent of intercept anglers who would be covered by the survey) ranges from 70% to nearly 100%. Coverage of the CHTS (30-80%) and ALDS (25-82%) independently is considerably less.

The quality of angler sample frames has proven to be a major impediment to developing effective dual-frame approaches. For example, incomplete contact information severely limits the utility of license databases as sample frames. In some states, the incidence of missing telephone numbers is as high as 70%. As a result of this limitation, the project team has decided to focus future efforts to refine the methodology on states with the most complete and highest quality sample frames. Currently, this includes North Carolina and Louisiana. Here, we propose to expand the methodology to the state of Washington, which has a relatively complete and efficient licensing system, and currently conducts telephone surveys that target licensed anglers.

#### Scope:

All anglers aged 15 or older must have a license to fish in the state of Washington. The Washington Interactive Licensing Data (WILD) system was implemented in 2001 to electronically capture recreational license issuance information at the point of sale. The WILD system captures demographic information for the majority of anglers that are issued fishing licenses; in 2008, approximately 75% of anglers who purchased a WILD license provided a telephone number. Reverse directory matching increases telephone coverage to nearly 90%. In 2007, approximately 845,000 WILD licenses were issued. Of these, approximately 403,000 were saltwater or saltwater/freshwater combination licenses. The WILD system accommodates both short-term licenses (1-5 days) and annual licenses. Annual licenses are valid from April 1-March 31 of the following year.

The state also issues "Hot Key" licenses that do not require input of personal information. The Hot Key process was devised to simplify issuance of short-term licenses for popular fisheries such as coastal razor-clam digs and the Buoy 10 salmon fishery. Thirty to forty-thousand Hot Key licenses are issued each year. In addition to the WILD-issued Hot Key licenses, salmon charter services can also provide one-day licenses in the form of charter stamps which are affixed to pre-printed catch cards. The catch cards include a stub with name/address information which is returned to WDFW. This demographic information is not immediately available, since it is manually entered from the stubs that are mailed by the charter operators, often at season's end. Approximately

25,000 such charter cards are issued annually, although exact numbers are not readily available; the total issuance is estimated based on stub returns from operators and card returns from anglers.

The Washington Angler License Telephone Survey (ALTS) utilizes the WILD license database as a sample frame for surveying recreational anglers. The survey, which is conducted in bi-monthly waves, attempts to contact licensed anglers and collect information about fishing effort.

Specifically, contacted anglers are asked to report the number of saltwater fishing trips he or she took during the wave, as well as the date, time, fishing mode, fishing area, fishing gear and targeted species for each trip. While the WILD system does cover the majority of saltwater anglers, the ALTS potentially suffers from bias due to under-coverage resulting from license exemptions (age < 15) and “Hot Key” licenses and charter stamps.

In addition to the ALTS, the CHTS is ongoing in WA. It was decided to continue the methodology after implementation of the ALTS for benchmarking purposes. Because the methodology is ongoing, it will be relatively simple and cost-effective to integrate the surveys in a dual-frame approach.

The dual-frame estimation approach has previously been documented. The WA dual-frame survey will utilize a similar approach, with minor adjustments to accommodate regionally-specific issues. The two survey questionnaires will be reviewed by the project team prior to implementation to ensure consistency, and that all necessary data elements for dual-frame estimation are collected.

The survey will be administered for a period of one year. Data collection will be consistent with the CHTS and ALTS (6 two-month waves). Survey results will be assessed at the conclusion of each wave and improvements implemented in subsequent waves.

The purpose of this (and other) dual-frame studies is to develop a methodology that satisfies the requirements of the Magnuson-Stevens Act, as well as recommendations from the NRC Review. It is anticipated that the methodology will be directly applicable to other regions and states that have developed or are developing lists of saltwater anglers. The goal of the project is to further develop an efficient and accurate methodology for estimating marine recreational fishing effort. The project will also provide an opportunity to compare effort estimates derived by telephone surveys to field-based methodologies. Successful completion of the project will result in a report documenting the methodology, describing benefits and limitations of the sample frames, and sampling and estimation designs, and recommending improvements for future surveys.

### **1.3. Objectives**

## 1.4. References

## **2. Methodology**

### **2.1. Methodology**

### **2.2. Regions**

### **2.3. Geographic Coverage**

### **2.4. Temporal Coverage**

### **2.5. Frequency**

### **2.6. Unit of Analysis**

### **2.7. Collection Mode**

### 3. Communications Plan

#### 3.1. Internal

#### 3.2. External

## **4. Assumptions and Constraints**

### **4.1. New Data**

### **4.2. Track Costs**

### **4.3. Funding Vehicle**

Pacific RecFIN Grant

### **4.4. Data Resources**

### **4.5. Other Resources**

### **4.6. Regulations**

### **4.7. Other**

It is assumed that the contractor currently responsible for conduct of the WA ALTS will be willing and able to take on the WA CHTS. The estimated cost for conduct of the CHTS (section 2.3 cost estimates) assumes that funding currently available for the CHTS in WA (\$53,400) would also be available for a new contractor (i.e. the amount estimated in section 2.3 is in addition to the 53K currently used to fund the survey).



# 5. Risk

## 5.1. Project Risk

Table 1: Project Risk

Risk Description	Risk Impact	Risk Probability	Risk Mitigation Approach
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## **6. Final Deliverables**

### **6.1. Additional Reports**

### **6.2. New Data Sets**

### **6.3. New Systems**

## 7. Project Leadership

### 7.1. Project Leader and Members

Table 2: Project Members

Project Role	Name	Organization	Title
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## 8. Project Estimates

### 8.1. Project Schedule

Table 3: Project Schedule - Major Tasks and Milestones

#	Schedule Description	Planned Start	Planned Finish	Prerequisites	Milestones
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### 8.2. Cost Estimates

Table 4: Cost Estimates

Project Need	Cost Description	Date Needed	Estimated Cost
TOTAL			\$0.00